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2 # DIGITAL SPREAD SPECTRUM CIRCUITRY

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8 ABSTRACT

9 The frequency of a skew clock signal is dithered around

10 a base frequency, thereby enabling this clock signal to

11 comply with FCC requirements for electromagnetic emissions

12 within a specified window (e.g., a 1 MHz window). That is,

13 delay can be introduced such that the clock signals exhibit

14 slightly different frequencies in successive periods. For

15 example, the frequency of a 100 MHz clock signal can be

16 adjusted to have frequencies of approximately 98, 98.5, 99,

17 99.5, 100, 100.5, 101, 101.5, and 102 MHz during different

18 periods. This configuration is referred to as a spread-8

19 configuration, because eight frequencies are used in addition

20 to the base frequency of 100 MHz. Because the frequencies

21 are spread in 0.5 MHz increments, only three of the nine

22 frequencies are included in any 1 MHz window. As a result,

23 2/3 of the energy of the clock signal is not included when

24 determining whether the clock signal meets the FCC

25 electromagnetic emission requirements in this test. By

26 spreading the frequencies above and below the base frequency

27 in a regular manner, the average frequency of the clock

28 signal becomes equal to the base frequency. Other

29 configurations including, but not limited to, spread-2,

30 spread-4, spread-6, spread-16 and spread-32 configurations,

31 can also be implemented.

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